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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,572	MITCHELL ET AL.	
	Examiner	Art Unit	
	HABTE MERED	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/28/09*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,13-20,23-30,33-45 and 51-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13-20,23-30,33-45 and 51-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/28/09 has been entered.

2. Claims 1-10, 13-20, 23-30, 33-45, and 51-65 are pending. Claims 1, 15, 25, 35, and 38 are the base independent claims. All of the base independent claims are currently amended. Claims 61-65 are new.

3. The Information Disclosure Statement (IDS) submitted on 11/04/09 has been fully considered and the corresponding 1449 form is an attachment to the instant Office Action.

Response to Arguments

4. Applicant's arguments with respect to independent claims have been considered but are moot in view of the new ground(s) of rejection.

In the Remarks, Applicant argues with respect to amended independent claims that Sakiso'390, Gai'491, and Herbert'780 taken alone or in any permissible

combination fail to teach the amended limitation of the independent claims.

Applicant further argues in the Remarks in the last two lines of page 18 and first three lines of page 19 that the amended limitation effectively teaches a fail back mechanism to the primary interface/link once the primary interface or the first link has recovered.

Examiner fully agrees with Applicant that Sakiso'390, Gai'491, and Herbert'780 taken alone or in any permissible combination fail to teach a fail back mechanism to the primary interface/link. However Hamami'972 unequivocally and explicitly teaches a fail back mechanism to the primary interface as evidenced in Fig. 4 steps 100 and 102 and is directly applicable to the teachings of the primary reference which teaches dual-homed architecture by preventing propagation of critical upstream link failures to downstream nodes.

Since Applicant is silent on the applicability of Hamami'972's disclosure in teaching the amended limitation effectively requiring "fail back mechanism to the primary interface/link", it is the position of the Examiner that Sakiso'390 in view of Hamami'972 constitute a new grounds of rejection of all independent claims under U.S.C. 103(a).

Claim Objections

5. Claim 25 is objected to because of the following informalities: Claim 25 is objected to because of the following informalities: Even though computer readable storage medium is assumed to partially exclude transitory media such as signal it is still preferable for Applicant to change "computer readable storage medium" to - - computer readable non-transitory storage medium - - to make the claim fully statutory under U.S.C. 101. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1-10, 13-20, 23-30, 33-45, and 51-60** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakiso (US Pub. 2004/0105390) in view of Hamami (US Patent 5, 959, 972).

Regarding **claim 1**, Sakiso'390 discloses

A method comprising:

detecting a failure of a first link **(Figure 1, Failure 2)**, wherein said first link **(Figure 1, LSW7 – also referred to as critical up-link in paragraph 28)** is between a network element **(Figure 1, LAN-Switch SW7)** and an upstream portion of a communications network **(towards R1 and R2 is upstream direction where as towards Host1…9 is downstream --- See paragraph 27)**, and

in response to said detecting said failure of said first link **(link down state is propagated down the chain all the way to the hosts as stated in paragraphs 18, 28, and 29. Pretty much detection is maintained by sending messages indicating link up state or link-down state)**, maintaining a communications channel between said downstream portion of said communications network and said upstream portion of said communications network by disabling a port of said network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by propagating link down state messages)** a second link **(Figure 1, LSW 1 and $L1_1$ are secondary links that connect host to critical link)**between said network element **(Figure 1, LAN-Switch SW7)** and a downstream portion of said communications network **(when the failure is detected the Host 1 switches the active $L1_1$ to the stand-by link $L1_2$ see paragraph 26 to maintain communication between downstream Host 1 and upstream represented by Edge Router R2. See also paragraph 28.)**.

Sakiso'390 fails to disclose

in response to detecting a recovery of said first link, maintaining said communications channel between said downstream portion of said communications network and said upstream portion of said communications network by re-enabling said port of said network element coupled to said second link between said network element and said downstream portion of said communications network.

However, the above mentioned claimed limitations are well known in the art as evidenced by Hamami'972. In particular, Hamami'972 discloses

in response to detecting a recovery of said first link **(i.e. main link 60 in Fig. 2 is 1st link and the other link is backup link 62 of Fig. 2 and recovery of main link is detected in Fig. 4 steps 100 and 102)**, maintaining said communications channel between said downstream portion of said communications network **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** and said upstream portion **(i.e. station 24 in Fig. 1 and ATM Switch #1 constitute upstream in Fig. 1)** of said communications network by re-enabling said port of said network element **(i.e. station 26 is the network element and its port 0 is now reconnected to the re-enabled port 1 of the first link/main link 60)** coupled to said second link **(i.e. Fig. 2 element 118 between station 26 and switch 2)** between said network element **(station 26)** and said downstream portion **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** of said communications network **(Network is defined in Figure 2 where the first link is main link 60 and when it recovers traffic**

is switched to the main link 60 and backup link 62 becomes standby and second link 118 of Fig. 2 is activated between downlink network element 26 port 0 and port 1 of recovered main link 60 – see Figs 2 and 3 and Fig. 4 steps 100 and 102).

In view of the above, having the method of Saksio'390 and then given the well established teaching of Hamami'972, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method of Saksio'390 as taught by Hamami'972, since Hamami'972 suggests in Column 3 Lines 55-60 that the modification results in being able to automatically detect the recovery of a preferred main/primary link for providing fail back mechanism.

Regarding **claim 2,** Saksio'390 discloses a method wherein the downstream portion of the communications network comprises a redundantly linked network element. **(See Figure 1, Hosts 1…9 is multi-homed with active and stand-by links).**

Regarding **claim 3,** Saksio'390 discloses a method wherein the redundantly-linked network element comprises a protocol stack including a first protocol stack layer and a second protocol stack layer, the first protocol stack layer is associated with one or more applications, and the disabling comprises notifying the second protocol stack layer of the failure. **(See Figures 2a and 2b - the protocol stacks involved are the MAC and PHY layers)**

Regarding **claim 4**, Saksio'390 discloses a method wherein the network element comprises a primary network element **(Figure 1, LAN-SW1)**, the method further comprises enabling a third link between the redundantly-linked network element **(Figure 1, Host 1)** and a secondary network element **(Figure 1, LAN-SW2)**, and the secondary network element is coupled to the upstream portion of the communications network using a fourth link **(Figure 1, LSW2). (See also paragraphs 26-29).**

Regarding **claim 5**, Saksio'390 discloses a method wherein the redundantly linked network element comprises a multi-homed end station **(See Figure 1, all Hosts are indeed multi-homed end station)**.

Regarding **claim 6**, Saksio'390 discloses a method wherein the network element comprises a data link layer network element. **(See Paragraphs 6 and 18)**

Regarding **claim 7**, Saksio'390 discloses a method wherein the data link layer network element comprises an Ethernet switch. **(See Figures 1 and 2a – the LAN Switch is an Ethernet switch)**

Regarding **claim 8**, Saksio'390 discloses a method wherein the upstream portion of the communications network comprises a network layer network element. **(Figure 1 – R1 and R2 are routers and are network layer network elements)**

Regarding **claim 9**, Saksio'390 discloses a method wherein the disabling comprises: disabling a plurality of links between the network element and a plurality of redundantly-linked network elements. **(Due to Failure 2 links LSW1, LSW3 and LSW4 are disabled – see paragraph 28)**

Regarding **claim 10,** Saksio'390 discloses a method wherein the disabling comprises: disabling a link of a plurality of links between the network element and a plurality of redundantly-linked network elements. **(Due to Failure 2 links LSW1, LSW3 and LSW4 are disabled – see paragraph 28)**

Regarding **claim 13**, Saksio'390 discloses a method wherein the disabling comprises: disabling the port of the network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by propagating link down state messages)** the second link between the network element and the downstream portion of the communications network within a period of time substantially less than or equal to 50 milliseconds of the detecting. **(See Paragraphs 14 and 16)**

Regarding **claim 14,** Saksio'390 discloses a method wherein the disabling comprises: disabling the port of the network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or**

corresponding links are disabled by being declared as being as non-functional by propagating link down state messages) the second link between said network element and said downstream portion of the communications network within a period of time substantially less than or equal to 2 seconds of the detecting. **(See Paragraphs 14 and 16 and given that Saksio'390 teaches the same method the same performance has to be produced)**

Regarding **claim 15**, Saksio'390 discloses an apparatus **(See Figure 1)** comprising:

means for detecting **(link down state is propagated down the chain all the way to the hosts as stated in paragraphs 18, 28, and 29. Pretty much detection is maintained by sending messages indicating link up state or link-down state)** a failure of a first link **(Figure 1, Failure 2)**, wherein the first link **(Figure 1, LSW7 – also referred to as critical up-link in paragraph 28)** is between a network element **(Figure 1, LAN-Switch SW7)** and an upstream portion of a communications network **(towards R1 and R2 is upstream direction where as towards Host1…9 is downstream --- See paragraph 27)**; and

means for maintaining a communications channel between the downstream portion of the communications network and the upstream portion of the communications network by disabling a port of the network element coupled to a **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by**

propagating link down state messages) a second link **(Figure 1, LSW 1 and $L1_1$ are secondary links that connect host to critical link)** between the network element **(Figure 1, LAN-Switch SW7)** and a downstream portion of the communications network **(when the failure is detected the Host 1 switches the active $L1_1$ to the stand-by link $L1_2$ see paragraph 26. See also paragraph 28)**.

Saksio'390 fails to disclose

in response to detecting a recovery of said first link,

means for maintaining said communications channel between said downstream portion of said communications network and said upstream portion of said communications network by re-enabling said port of said network element coupled to said second link between said network element and said downstream portion of said communications network.

However, the above mentioned claimed limitations are well known in the art as evidenced by Hamami'972. In particular, Hamami'972 discloses

in response to detecting a recovery of said first link **(i.e. main link 60 in Fig. 2 is 1st link and the other link is backup link 62 of Fig. 2 and recovery of main link is detected in Fig. 4 steps 100 and 102)**,

means for **(i.e. switch matrix 48 in Fig. 2)** maintaining said communications channel between said downstream portion of said communications network **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** and said upstream portion **(i.e. station 24 in Fig. 1 and ATM Switch #1 constitute upstream in Fig. 1)** of

said communications network by re-enabling said port of said network element **(i.e. station 26 is the network element and its port 0 is now reconnected to the re-enabled port 1 of the first link/main link 60)** coupled to said second link **(i.e. Fig. 2 element 118 between station 26 and switch 2)** between said network element **(station 26)** and said downstream portion **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** of said communications network **(Network is defined in Figure 2 where the first link is main link 60 and when it recovers traffic is switched to the main link 60 and backup link 62 becomes standby and second link 118 of Fig. 2 is activated between downlink network element 26 port 0 and port 1 of recovered main link 60 – see Figs 2 and 3 and Fig. 4 steps 100 and 102).**

In view of the above, having the apparatus of Saksio'390 and then given the well established teaching of Hamami'972, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the apparatus of Saksio'390 as taught by Hamami'972, since Hamami'972 suggests in Column 3 Lines 55-60 that the modification results in being able to automatically detect the recovery of a preferred main/primary link for providing fail back mechanism.

Regarding **claim 16**, it is noted that the limitations of claim 16 corresponds to that of claim 2 as discussed above, please see the Examiner's comments with respect to claim 2 as set forth in the rejection above.

Regarding **claim 17**, it is noted that the limitations of claim 17 corresponds to that of claim 3 as discussed above, please see the Examiner's comments with respect to claim 3 as set forth in the rejection above.

Regarding **claim 18**, it is noted that the limitations of claim 18 corresponds to that of claim 4 as discussed above, please see the Examiner's comments with respect to claim 4 as set forth in the rejection above.

Regarding **claim 19**, it is noted that the limitations of claim 19 corresponds to that of claim 5 as discussed above, please see the Examiner's comments with respect to claim 5 as set forth in the rejection above.

Regarding **claim 20,** it is noted that the limitations of claim 20 corresponds to that of claim 10 as discussed above, please see the Examiner's comments with respect to claim 10 as set forth in the rejection above.

Regarding **claim 23**, it is noted that the limitations of claim 23 corresponds to that of claim 13 as discussed above, please see the Examiner's comments with respect to claim 13 as set forth in the rejection above.

Regarding **claim 24,** it is noted that the limitations of claim 24 corresponds to that of claim 14 as discussed above, please see the Examiner's comments with respect to claim 14 as set forth in the rejection above.

Regarding **claim 25**, Saksio'390 discloses a machine readable storage medium having a plurality of instructions executable by a machine embodied therein **(See Figures 2A and 2B showing implementation of the switch and host and in paragraphs 33 and 36 Saksio'390 describes the medium the instruction is stored)**, wherein the plurality of instructions wherein executed cause the machine to perform a method comprising:

detecting a failure of a first link **(Figure 1, Failure 2)**, wherein

said first link **(Figure 1, LSW7 – also referred to as critical up-link in paragraph 28)** is between a network element **(Figure 1, LAN-Switch SW7)** and an upstream portion of a communications network **(towards R1 and R2 is upstream direction where as towards Host1…9 is downstream --- See paragraph 27)**, and

in response to said detecting said failure of said first link **(link down state is propagated down the chain all the way to the hosts as stated in paragraphs 18, 28, and 29. Pretty much detection is maintained by sending messages indicating link up state or link-down state)**, maintaining a communications channel between said downstream portion of said communications network and said upstream portion of said communications network by disabling a port of said network element coupled to

(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by propagating link down state messages) a second link **(Figure 1, LSW 1 and $L1_1$ are secondary links that connect host to critical link)**between said network element **(Figure 1, LAN-Switch SW7)** and a downstream portion of said communications network **(when the failure is detected the Host 1 switches the active $L1_1$ to the stand-by link $L1_2$ see paragraph 26 to maintain communication between downstream Host 1 and upstream represented by Edge Router R2. See also paragraph 28.)**.

Sakiso'390 fails to disclose

in response to detecting a recovery of said first link, maintaining said communications channel between said downstream portion of said communications network and said upstream portion of said communications network by re-enabling said port of said network element coupled to said second link between said network element and said downstream portion of said communications network.

However, the above mentioned claimed limitations are well known in the art as evidenced by Hamami'972. In particular, Hamami'972 discloses

in response to detecting a recovery of said first link **(i.e. main link 60 in Fig. 2 is 1st link and the other link is backup link 62 of Fig. 2 and recovery of main link is detected in Fig. 4 steps 100 and 102)**, maintaining said communications channel between said downstream portion of said communications network **(i.e. station 26 in**

Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1) and said upstream portion **(i.e. station 24 in Fig. 1 and ATM Switch #1 constitute upstream in Fig. 1)** of said communications network by re-enabling said port of said network element **(i.e. station 26 is the network element and its port 0 is now reconnected to the re-enabled port 1 of the first link/main link 60)** coupled to said second link **(i.e. Fig. 2 element 118 between station 26 and switch 2)** between said network element **(station 26)** and said downstream portion **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** of said communications network **(Network is defined in Figure 2 where the first link is main link 60 and when it recovers traffic is switched to the main link 60 and backup link 62 becomes standby and second link 118 of Fig. 2 is activated between downlink network element 26 port 0 and port 1 of recovered main link 60 – see Figs 2 and 3 and Fig. 4 steps 100 and 102).**

In view of the above, having the medium of Saksio'390 and then given the well established teaching of Hamami'972, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the medium of Saksio'390 as taught by Hamami'972, since Hamami'972 suggests in Column 3 Lines 55-60 that the modification results in being able to automatically detect the recovery of a preferred main/primary link for providing fail back mechanism.

Regarding **claim 26**, it is noted that the limitations of claim 26 corresponds to that of claim 2 as discussed above, please see the Examiner's comments with respect to claim 2 as set forth in the rejection above.

Regarding **claim 27**, it is noted that the limitations of claim 27 corresponds to that of claim 3 as discussed above, please see the Examiner's comments with respect to claim 3 as set forth in the rejection above.

Regarding **claim 28**, it is noted that the limitations of claim 28 corresponds to that of claim 4 as discussed above, please see the Examiner's comments with respect to claim 4 as set forth in the rejection above.

Regarding **claim 29**, it is noted that the limitations of claim 29 corresponds to that of claim 5 as discussed above, please see the Examiner's comments with respect to claim 5 as set forth in the rejection above.

Regarding **claim 30,** it is noted that the limitations of claim 30 corresponds to that of claim 10 as discussed above, please see the Examiner's comments with respect to claim 10 as set forth in the rejection above.

Regarding **claim 33**, it is noted that the limitations of claim 33 corresponds to that of claim 13 as discussed above, please see the Examiner's comments with respect to claim 13 as set forth in the rejection above.

Regarding claim 34, it is noted that the limitations of claim 34 corresponds to that of claim 14 as discussed above, please see the Examiner's comments with respect to claim 14 as set forth in the rejection above.

Regarding **claims 35**, Saksio'390 discloses a data processing system comprising:

a redundantly-linked end station **(See Hosts 1…9 which is multi-homed)**; and a network element **(Figure 1, LSW7)** configured to detect a failure of a first link, wherein the first link is **(Figure 1, LSW7)** between the network element and an upstream portion of a communications network **(towards R1 and R2 is upstream direction where as towards Host1…9 is downstream --- See paragraph 27)**, and

in response to detecting the failure of the first link, maintain a communications channel between the redundantly-linked end station and the upstream portion of the communications network **(Figure 1, LAN-Switch SW7)** and a downstream portion of the communications network **(when the failure is detected the Host 1 switches the active $L1_1$ to the stand-by link $L1_2$ see paragraph 26. See also paragraph 28)** by disabling by disabling a port of the network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by propagating link down state messages)** a second link **(Figure 1, LSW 1 and $L1_1$ are secondary links that connect host to critical link)** between the network element

and the redundantly-linked end station **(See also Paragraphs 26, 27, and 28)**.

Sakiso'390 fails to disclose

in response to detecting a recovery of said first link, maintain said communications channel between said redundantly-linked end station and said upstream portion of said communications network by re-enabling said port of said network element coupled to said second link between said network element and said redundantly-linked end station.

However, the above mentioned claimed limitations are well known in the art as evidenced by Hamami'972. In particular, Hamami'972 discloses

in response to detecting a recovery of said first link **(i.e. main link 60 in Fig. 2 is 1st link and the other link is backup link 62 of Fig. 2 and recovery of main link is detected in Fig. 4 steps 100 and 102)**, maintaining said communications channel between said redundantly linked end station**(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1)** and said upstream portion **(i.e. station 24 in Fig. 1 and ATM Switch #1 constitute upstream in Fig. 1)** of said communications network by re-enabling said port of said network element **(i.e. port 1 of switch 1 - station 26 is the network element and its port 0 is now reconnected to the re-enabled port 1 of switch 1 of the first link/main link 60)** coupled to said second link **(i.e. Fig. 2 element 118 between station 26 and switch 2)** between said network element **(switch 1)** and

said redundantly linked end station **(i.e. station 26 in Fig. 1 and ATM Switch #2 constitute downstream in Fig. 1) (Note that Network is defined in Figure 2 where the first link is main link 60 and when it recovers traffic is switched to the main link 60 and backup link 62 becomes standby and second link 118 of Fig. 2 is activated between downlink network element 26 port 0 and port 1 of recovered main link 60 – see Figs 2 and 3 and Fig. 4 steps 100 and 102).**

In view of the above, having the system of Saksio'390 and then given the well established teaching of Hamami'972, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Saksio'390 as taught by Hamami'972, since Hamami'972 suggests in Column 3 Lines 55-60 that the modification results in being able to automatically detect the recovery of a preferred main/primary link for providing fail back mechanism.

Regarding **claims 36**, Saksio'390 discloses a data processing system wherein the network element comprises a primary network element **(Figure 1, LAN-SW1)**, the redundantly-linked end station **(Host 1)** is configured to enable a third link **(Figure 1, $L1_2$)** between the redundantly-linked end station and a secondary network element **(Figure 1, LAN-SW2)**, and the secondary network element is coupled to the upstream portion of the communications network using a fourth link **(Figure 1, LAN-SW2)**.

Regarding **claim 37**, Saksio'390 discloses a data processing system wherein the network element comprises an Ethernet switch. (**See Figure 2a and all the LAN switches in Figure 1 are Ethernet switches)**

Regarding **claim 38**, Saksio discloses a data processing system comprising:
a redundantly-linked end station **(See Hosts 1…9 which is multi-homed)**;
a primary network element **(Figure 1, LAN-SW1)**, wherein
the primary network element is coupled to an upstream portion of a communications network using a first link **(Figure 1, LSW1)**,
the primary network element is coupled to the redundantly-linked end station using a second link **(Figure 1, $L1_1$)** and
the primary network element is configured to detect a failure of the first link **(Figure 1, Failure 1)**, and
disable a port of the primary network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or corresponding links are disabled by being declared as being as non-functional by propagating link down state messages)** the second link to maintain a communications channel between the redundantly-linked end station and the upstream portion of the communications network **(See paragraphs 26 and 27)**; and a secondary network element **(Figure 1, LAN-SW2)**, wherein the secondary network element is coupled to the redundantly-linked end station using a third link **(Figure 1, L12). (See Paragraphs 26, 27, and 28)**

Saksio'390 fails to disclose

in response to detecting the failure of said first link,

re-enable said port of said primary, network element coupled to said second link to maintain a communications channel between said redundantly-linked end station and said upstream portion of said communications network in response to detecting a recovery of said first link;

However, the above mentioned claimed limitations are well known in the art as evidenced by Hamami'972. In particular, Hamami'972 discloses

in response to detecting a recovery of said first link **(i.e. main link 60 in Fig. 2 is 1st link and the other link is backup link 62 of Fig. 2 and recovery of main link is detected in Fig. 4 steps 100 and 102)**,

re-enable said port of said primary network element **(Fig. 4 steps 100 and 102)** coupled to said second link **(i.e. Fig. 2 element 118 between station 26 and switch 2)** to maintain a communications channel between said redundantly-linked end station **(Fig. 2 station 26)** and said upstream portion **(Fig. 2 switch 1)** of said communications network in response to detecting a recovery **(Fig. 4 steps 100,102)** of said first link **(Note that Network is defined in Figure 2 where the first link is main link 60 and when it recovers traffic is switched to the main link 60 and backup link 62 becomes standby and second link 118 of Fig. 2 is activated between downlink**

network element 26 port 0 and port 1 of recovered main link 60 – see Figs 2 and 3 and Fig. 4 steps 100 and 102).

In view of the above, having the system of Saksio'390 and then given the well established teaching of Hamami'972, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Saksio'390 as taught by Hamami'972, since Hamami'972 suggests in Column 3 Lines 55-60 that the modification results in being able to automatically detect the recovery of a preferred main/primary link for providing fail back mechanism.

Regarding **claim 39**, Saksio'390 discloses a data processing system, wherein the redundantly-linked end station **(Figure 1, Host 1)** is configured to enable the third link **(Figure 1, $L1_2$)**, and the secondary network element **(Figure 1, LAN-SW2)** is coupled to the upstream portion of the communication network using a fourth link **(Figure 1, LSW2)**

Regarding **claims 40**, Saksio'390 discloses a data processing system wherein the primary network element comprises an Ethernet switch. (**See Figure 2a and all the LAN switches in Figure 1 are Ethernet switches)**

Regarding **claim 41**, Saksio'390 discloses a method wherein the second link is a downstream link that is individually predetermined by a configuration interface.

(Saksio'390 already teaches the second link is a downstream link – see paragraph 28).

Regarding **claim 42**, it is noted that the limitations of claim 42 corresponds to that of claim 41 as discussed above, please see the Examiner's comments with respect to claim 41 as set forth in the rejection above.

Regarding **claim 43**, it is noted that the limitations of claim 43 corresponds to that of claim 41 as discussed above, please see the Examiner's comments with respect to claim 41 as set forth in the rejection above.

Regarding **claim 44**, it is noted that the limitations of claim 44 corresponds to that of claim 41 as discussed above, please see the Examiner's comments with respect to claim 41 as set forth in the rejection above.

Regarding **claim 45**, it is noted that the limitations of claim 45 corresponds to that of claim 41 as discussed above, please see the Examiner's comments with respect to claim 41 as set forth in the rejection above.

Regarding **claim 51**, the combination of Saksio'390 and Hamami'972 discloses a method wherein the disabling the port of the network element coupled to **(Saksio'390 discloses when failure occurs on the first critical link, LSW7, all LAN ports and/or**

corresponding links are disabled by being declared as being as non-functional by propagating link down state messages) the second link on-demand in response to analyzing a plurality of system attributes **(Hamami'972 shows in Column 7, Lines 25-30 that the Administrator can enter on-demand commands in the switches to select links and configure switches with blocked and forwarding ports in response to various conditions)**.

Regarding **claim 52**, it is noted that the limitations of claim 52 corresponds to that of claim 51 as discussed above, please see the Examiner's comments with respect to claim 51 as set forth in the rejection above.

Regarding **claim 53**, it is noted that the limitations of claim 53 corresponds to that of claim 51 as discussed above, please see the Examiner's comments with respect to claim 51 as set forth in the rejection above.

Regarding **claim 54**, it is noted that the limitations of claim 54 corresponds to that of claim 51 as discussed above, please see the Examiner's comments with respect to claim 51 as set forth in the rejection above.

Regarding **claim 55**, it is noted that the limitations of claim 55 corresponds to that of claim 51 as discussed above, please see the Examiner's comments with respect to claim 51 as set forth in the rejection above.

Regarding **claim 56**, the combination of Saksio'390 and Hamami'972 discloses a method further comprising: the redundantly-linked network element **(Figures 1 and 2, switches #1 and #2)** failing back to the second link **(i.e. main link 60 connecting port 1 of each switch Column 5, Lines 10-20**) when the first link **(backup link 62 connecting port 2 of each switch)** and the second link become operational again **(Hamami'972 discloses after the main link 60 of a redundantly linked switch 1 or 2 fails then traffic is switched to the backup link 62 of switch 1 or 2. Once the main link 60 is back the traffic is switched back to link 60 from link 62 - see for details Figs. 1 and 2 and Column 4, Lines 39-50 and Column 5, Lines 10-20)**.

Regarding **claim 57**, it is noted that the limitations of claim 56 corresponds to that of claim 56 as discussed above, please see the Examiner's comments with respect to claim 56 as set forth in the rejection above.

Regarding **claim 58**, it is noted that the limitations of claim 56 corresponds to that of claim 56 as discussed above, please see the Examiner's comments with respect to claim 56 as set forth in the rejection above.

Regarding **claim 59**, it is noted that the limitations of claim 56 corresponds to that of claim 56 as discussed above, please see the Examiner's comments with respect to claim 56 as set forth in the rejection above.

Regarding **claim 60**, it is noted that the limitations of claim 56 corresponds to that of claim 56 as discussed above, please see the Examiner's comments with respect to claim 56 as set forth in the rejection above.

Claim Rejections - 35 USC § 103

7. **Claims 61-65** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakiso'390 in view of Hamami'972 as applied to claims 1, 15, 25, 35, and 38 respectively above, and further in view of Gai'491 and Herbert'780.

Regarding **claim 61**, the combination of Sakiso'390 and Hamami'972 fail to disclose a method wherein

said first link is associated with a virtual network;

said second link is associated with said virtual network; and

said port of said network element is disabled as a result of

said port being associated with said virtual network,

However, the above mentioned claimed limitations are well known in the art as evidenced by Gai'491. In particular, Gai'491 discloses a method of detecting a failure of a link **(Gai'491 shows in Column 5, 10-15 that a link failure is detected and as a result reconfigures the ports to bi-pass the failure situation. See also Figure 4)** wherein the first link **(Figure 1, elements 128)** is associated with a virtual network **(Gai'491 discloses that Figure 1 is a Virtual LAN in Column 15, Lines 48-65)** and also the second link **(Figure 1, links connecting servers and hosts to the LANs)** is associated with the virtual network **(i.e. Figure 1)** and the port **(port 3 of switch 114 - see column 128-25)** of the network element **(i.e. access switch 114 of Figure 1)** is

disabled as a result of the port being associated **(in Fig. 3D and Fig. 3E in block 356 and 358 when ever a port is disabled or enabled the change is reflected by running a spanning tree state machine to correct implications in the virtual network)** with the virtual network (**Figure 1 is a Virtual LAN as stated in Column 15, Lines 48-65)**.

In view of the above, having the method based on the combination of Saksio'390 and Hamami'972 and then given the well established teaching of Gai'491, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Saksio'390 and Hamami'972 as taught by Gai'491, since Gai'491 clearly states in Column 15, Lines 48-50 that the benefit of using virtual networks is to provide network groupings and segregation based on functionalities.

The combination of Saksio'390and Hamami'972 fails to disclose a method wherein the port of the network element being disabled as a result of a bandwidth between the upstream portion of the communications network and the network element falling below a predetermined threshold as a result of the failure of the first link.

However, the above mentioned claimed limitations are well known in the art as evidenced by Hebert'780. In particular, Hebert'780 discloses a method wherein the port of the network element **(i.e. ports of switch 880&820 – Fig. 9)** being disabled as a result of a bandwidth **(i.e. trunk capacity Column 11 Line 67)** between the upstream portion of the communications network **(i.e. Primary 982 connections – Fig. 9)** and the network element **(i.e. switch 880 0r 820)** falling below a predetermined threshold **(i.e.**

threshold of 50%) as a result of the failure of the first link **(i.e. trunk between switch 880 and 820 is the first link and if the connections on the trunk fail below a certain predetermined threshold the port of the network element switch 820.is disabled and failover to secondary 984 connection occurs – see Fig. 9 and Column 11 Line 49 to Column 12 line 10)**.

In view of the above, having the method based on the combination of Saksio'390 and Hamami'972 and then given the well established teaching of Hebert'780, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the method based on the combination of Saksio'390 and Hamami'972 as taught by Herbert'780, since Herbert'780 clearly states in Column 2, Lines 42-48 that the modification results in minimized network interruptions and is portable across multiple platforms. Further Hebert'780 in Column 13, Lines 40-67 discloses that his system is compatible with virtual networks and the primary connection and secondary connection can be part of a virtual network making the disclosure compatible with the teaching of Saksio'390 as modified by the teachings of Gai'491.

Regarding **claim 62**, it is noted that the limitations of claim 62 corresponds to that of claim 61 as discussed above, please see the Examiner's comments with respect to claim 61 as set forth in the rejection above.

Regarding **claim 63**, it is noted that the limitations of claim 63 corresponds to that of claim 61 as discussed above, please see the Examiner's comments with respect to claim 61 as set forth in the rejection above.

Regarding **claim 64**, it is noted that the limitations of claim 64 corresponds to that of claim 61 as discussed above, please see the Examiner's comments with respect to claim 61 as set forth in the rejection above.

Regarding **claim 65**, it is noted that the limitations of claim 65 corresponds to that of claim 61 as discussed above, please see the Examiner's comments with respect to claim 61 as set forth in the rejection above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HABTE MERED whose telephone number is (571)272-6046. The examiner can normally be reached on Monday to Friday 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on 571 272 7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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